

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Original) A method for manufacturing multi-wall carbon nanotubes comprising:

a process for preparing fullerene/carbon nanotube hybrid structures wherein assembled fullerenes, these being fullerenes that are linked, are housed within carbon nanotubes, and

a process whereby the hybrid structures are subjected to electron beam irradiation while in a heated state, thereby forming interior tubes from the assembled fullerenes.

2. (Original) A method as set forth in Claim 1, wherein the assembled fullerenes are essentially composed of C₆₀ fullerenes.

3. (Original) A method as set forth in Claim 1, wherein the carbon nanotubes forming part of the hybrid structures are essentially single-wall carbon nanotubes.

4. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams while in a state of being heated to 80 ~ 700°C.

5. (Original) A method as set forth in Claim 4, wherein the hybrid structures are subjected to irradiation with the electron beams while in a state of being heated to 100 ~ 500°C.

6. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams having an accelerating voltage of 80 ~ 250 kV.

7. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams at 100 ~ 500 C/cm²/min.

8. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams at an electron beam density of 1 ~ 8 × 10⁻¹¹A /cm².

9. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams for 15 minutes or less.

10. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams while in a state of being heated to 70 ~ 250°C.

11. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams having an accelerating voltage of 80 ~ 150 kV.

12. (Original) A method as set forth in Claim 1, wherein the hybrid structures are subjected to irradiation with the electron beams at an electron beam density of $0.5 \sim 5 \times 10^{-11} \text{ A/cm}^2$.

13. (Currently Amended) A method as set forth in Claim 1, wherein the hybrid structures are maintained in the heated state ~~for a specified period~~ before irradiation with the electron beams begins.

14. (Currently Amended) A method as set forth in Claim 1, wherein, after the irradiation of the hybrid structures with the electron beams has finished, resulting products thereof are maintained ~~for a specified period~~ within the same temperature range as during irradiation.

15. (Original) A method as set forth in Claim 1, wherein a process for preparing the hybrid structures includes a treatment whereby the fullerenes and the carbon nanotubes having an opening therein are brought together, and the fullerenes are filled into the carbon nanotubes.

16. (Withdrawn) Multi-wall carbon nanotubes manufactured by means of the manufacturing method of Claim 1.

17. (Withdrawn) Multi-wall carbon nanotubes comprising:
single-wall carbon nanotubes that form exterior tubes, and
single-wall carbon nanotubes that form interior tubes housed within the exterior tubes,
the diameter of the interior tubes being approximately 0.3 ~ 0.4 nm.

18. (Withdrawn) Multi-wall carbon nanotubes comprising:
single-wall carbon nanotubes that form exterior tubes, and
single-wall carbon nanotubes that form interior tubes housed within the exterior tubes,
a plurality of the interior tubes being housed in series.

19. (Withdrawn) Multi-wall carbon nanotubes as set forth in Claim 18, the average length of the interior tubes thereof being 1 ~ 5 nm.

20. (New) A method for manufacturing multi-wall carbon nanotubes comprising:
preparing fullerene/carbon nanotube hybrid structures wherein assembled linked fullerenes are housed within carbon nanotubes;
heating the hybrid structures; and

electron beam irradiating the heated hybrid structures, thereby forming interior tubes from the assembled fullerenes.

21. (New) A method for manufacturing multi-wall carbon nanotubes comprising:

preparing fullerene/carbon nanotube hybrid structures wherein assembled linked fullerenes are housed within carbon nanotubes, and

simultaneously heating and electron beam irradiating the hybrid structures thereby forming interior tubes from the assembled fullerenes.

22. (New) The method of claim 1, wherein recovery from damage caused by the irradiation is accelerated by the heated state of the hybrid structures.

23. (New) The method of claim 20, wherein recovery from damage caused by the irradiation is accelerated by the heating step.

24. (New) The method of claim 21, wherein recovery from damage caused by the irradiation is accelerated by the simultaneous heating.